OPTIONAL SORTING MODULE
G1533954
REQUIREMENTS SHEET

1. Sorting Features

   A. Support 512 sources
   B. Sort incoming units using the following sorting keys:
      1. SP FIFO number (1-13) and
      2. Source ID appended by service processor ASIC:
            13 bits for frame FIFOs
            7 bits for packet FIFOs
   C. Map the sorting keys into a source number
   D. Stack data into bins without fill (not word or longword aligned)
   E. Annotation
      1. Optionally prepend a 32 bit header to each bin to indicate source number
      2. Optionally remove the source ID which was added to each unit by the SV chip
      3. Optionally prepend/append unit length to each unit - programmable for each source

2. Other Required Features

   A. Support flush at end of session - must indicate size of flushed data
   B. Support Real Time Data (not sorted)

3. Performance

   A. Handle 150 Mbps input stream (no data multiplication)
   B. Minimize required software overhead for moving data from RLP/OSM to PCI system memory.
      1. Less than 1 interrupt per millisecond when using 512 sources
      2. Allow block size of at least 16K bytes for each source when using 512 sources
   C. Scale interrupts and block size for better performance when less sources are used
   D. Facilitate high bandwidth on PCI bus
      1. Transfer 1 longword every 33 MHz clock during bursts
      2. Insure minimal burst size of 64 bytes before release of PCI bus

4. Frame/Packet Handling

   A. Support 512 sources (must have SV chip annotation)
   B. Support 65542 byte packet size (plus up to 32 bytes of
      SV chip annotation plus any OSM annotation)

5. Physical

   A. Max. component height is:
      Top: 0.258" (assuming 0.062" board thickness)
      Bottom: varies depending on height of RLP component (most areas have at least 0.060" ,
      assuming .050" clearance and RLP component height of 0.150")
   B. Physical dimensions
      Length: 10.27" max.
      Width: 3.77" max.
   C. Cannot cover the following RLP components:
      DC/DC converters, MACHPRO connector, ECL logic
   D. Connector

1. 200 pin (4 rows x 50), surface mount, 50 mil pitch
2. Samtec MOLC-150-02-S-Q-P
3. Board to board height is: 0.250"
E.   Standoffs - How many? What type?

6. Environmental

    A. Temperature Range: 0 to 70 Celsius

7. Power Dissipation

    A. RLP plus OSM should total less than 25 Watt (we won't meet this!!)
    B. Use 3.3 Volt supply where possible